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| APPLICATION NO.                                                     | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/728,062                                                          | 12/04/2003  | Leon Swennen         | 47099-00151USPT     | 7668             |
| 28763                                                               | 7590        | 12/08/2005           | EXAMINER            |                  |
| WINSTON & STRAWN LLP<br>1700 K STREET, N.W.<br>WASHINGTON, DC 20006 |             |                      | ZEMEL, IRINA SOPHIA |                  |
|                                                                     |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                     |             |                      | 1711                |                  |

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/728,062             |  | SWENNEN, LEON       |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Irina S. Zemel         |  | 1711                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-92 is/are pending in the application.
- 4a) Of the above claim(s) 22-42 and 68-92 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 43-67 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                    |                                                                             |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____                                                |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/7/04</u> .                                                              | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Invention Group I, claims 1-21 and 43-67 in the reply filed on 9-26-2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden on the examiner to examine both inventions together and the inventions do not have a divergent subject matter. This is not found persuasive because the searches for invention containing different second component (even though the second component may be from the same class of polymers) are not co-extensive and require different components to be searched separately, thus presenting additional and significant search burden on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claims 22-42 and 68-92 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

The examiner notes that in the original restriction requirement Group two was indicated as containing claims 22-24 and 68-92, and not claims 24-42 and 68-92 (by inverting numerals 2 and 4). However, it was quite obvious from the dependency of the claims and the fact that claims 25-42 were not included in any of the groups, that it was simple=y and inadvertent and obvious error. The examiner regrets any inconvenience this error may have caused the applicants.

### ***Claim Objections***

Claims 5-10 and 47-52 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The component ranges recited in each of the claims 5-10 and 47-52 fall outside of the range claimed in each previous claim claims 5-10 and 47-52 directly depend from. For example, claim 4 recites 5-10 % of the first component ( LLDPE), while claim 5, directly depending on claim 4, recites 10 to 15 % of the same component, thus failing to further limit the claim it depends from.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14, 17-20, 43-55, 58-59, 60-61, 63-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 64-22937 to JSP Corp., (hereinafter "JSP") in combination with Kirk-Otmer Encyclopedia of Chemical Technology (hereinafter "Encyclopedia"), Ziegler-Natta Catalysts, and Polyethylene, Linear Low Density.

JSP discloses un-crosslinked closed pore polyolefin foams comprising two different polyethylenes. The first polyethylene is a linear low density polyethylene(LLDPE) with melt flow index preferably of less than 10 g/10 min, and as

low as 0.5 or 1 g/10 minutes (as per claims 1, 17, 18, 43, 58 and 59 and density of between .915 and 0.94. See column abstract, and page 280. The reference further expressly discloses that the second component is preferable a low density polyethylene (LDPE) as per claims 2 and 44. See column abstract, page 280. The reference also expressly teaches that the amounts of the second component in the composition is from 30 to 90 %, thus anticipating limitations of claims 3-10 and 45-53. The expansion ratio of the resulting foams well exceeds 10 (see examples), thus, the resulting foams inherently have the claimed density. The mixture of two polyethylenes is blended with the blowing agent and extruded in an extruder at predetermined rate and temperatures to obtain a foamed sheet. See examples, pages 281-82.

The JSP reference does not disclose whether the LLDPE are Ziegler-Natta catalyzed polymers, and further the reference is silent to the molecular weight distribution (MWD) of the LLDPE, thus implying that LLDPE of any MWD and obtained with any polymerization catalyst can be used. However, it is notoriously known in the art, that the vast majority of alpha-olefins are polymerized with Ziegler-Natta (Z-N) catalysts, and, even if, arguendo, the LLDPE of the JSP reference is not a Ziegler-Natta polymerized polymer, use of such would have been obvious for an ordinary artisan, since Ziegler-Natta polymerized polyolefin have known and predictable properties that can be controlled by the choice of a specific Z-N catalyst. See Encyclopedia, Ziegler-Natta Catalysts, sections 4., 4.3.2., Polyethylene, Linear Low Density, section 5. Furthermore, it is notoriously known that the MWD of a polyethylene can be controlled by the choice of a specific Z-N catalyst, and that MWD governs a range of physical

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properties of the polyethylenes, and can be readily varied by polymerization design, with the common MWD values of below 4.0, See the referenced sections of the cited portions of Encyclopedia and further Polyethylene, Linear Low Density, section 3. Therefore, the claimed LLPE would have been an obvious choice of an ordinary artisan as a known polymer with its predictable and known properties in the absence of showing of unexpected results that can be clearly attributed to the choice of the specified catalyst and the MWD value. So far the record contains no such evidence of unexpected results.

Claims 15-16 and 56-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 64-22937 to JSP Corp., (hereinafter "JSP") in combination with Kirk-Otmer Encyclopedia of Chemical Technology (hereinafter "Encyclopedia"), Ziegler-Natta Catalysts, and Polyethylene, Linear Low Density as applied to claims 1 and 43 above, and further in view of Encyclopedia, Polymers.

The JPS reference is silent with respect to the melting points of the LLDPE and LDPE suitable for the invention, thus implying that LLDPE and LDPE of any known and conventionally available melting temperatures ( $T_m$ ) are suitable for the invention. LLDPE are conventionally exhibit  $T_m$  in the range of 115-120 C, and as high as 128 (see Polyethylene, Linear low density, section 3.2), while LDPE are known to exhibit  $T_m$  in the range of 105-120 and higher. See Polymers, sections 2.6, etc. Thus, LLDPE and LDPE with the claimed  $T_m$  differences are commercially known and available, and would have been an obvious choice among other available polyethylenes in the

absence of showing of unexpected results that can be attributed to the difference in the melting points of the two polyethylenes as claimed.

Claims 21 and 62 rejected under 35 U.S.C. 103(a) as being unpatentable over JP 64-22937 to JSP Corp., (hereinafter "JSP") in combination with Kirk-Otmer Encyclopedia of Chemical Technology, Ziegler-Natta Catalysts, and Polyethylene, Linear Low Density, above, and further in view of US patent 6,114,025 to DeVaudreuil et al., (hereinafter ("DeVaudreuil")).

The disclosure of the JSP and Encyclopedia references is discussed above. JSP, while disclosing possibility of incorporation of additives, does not specifically addresses incorporation of nucleating agents as claimed in claims 21 and 62. However, addition of nucleating agents to polyolefin foamable compositions is well known in the art for regulation of the cell size, as evidenced, for example, by DeVaudreuil, paragraph bridging columns 4 and 5. Thus addition of a nucleating agents to compositions of SP (as modified in view of encyclopedia) would have been obvious for its known and expected effect on the cell size.

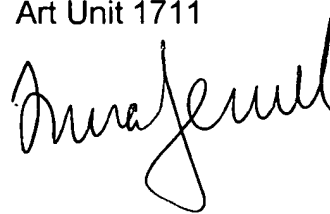
.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irina S. Zemel  
Examiner  
Art Unit 1711

A handwritten signature in black ink, appearing to read 'Irina Zemel', written in a cursive style.

ISZ